

Work Order ID 151464***151464***

Page 1

Tuesday, September 27, 2016 11:54:02 AM

Item ID: D4004-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Side Restraint Angle
Start Date: 10/4/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 10/12/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: DAS Date: SEP 28 2016 Tooling: _____ Date: _____ Run Start ***NR1***
QC: 21 Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***
9-89

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4004	B								
100		0.02							
100									
Waterjet	Memo	0.01							
FLOW CNC Waterjet	1-Cut as per Dwg (D4004-1) Dwg Rev: <u>B</u> Prog Rev: <u>B</u> 2-Deburr if necessary								
110	QC2- Inspect parts off machine FAI/FAIB	0.00							
110									
QC	Memo	0.00							
Quality Control									

PR 16/10/03

1

PR 16/10/03

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : ☐			

Work Order ID 151464

Tuesday, September 27, 2016 11:54:02 AM

151464

Page 2

Item ID: D4004-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Side Restraint Angle
Start Date: 10/4/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 10/12/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00				<u>1</u>			DAS 38 9-89 OCT 05 2016
130 *130* Brake NC Brake NC	Bend as per dwg Memo 1- Bend D4004-1 as per Dwg 2- C'sink as per dwg	0.00 0.01			DAS 30 9-89	<u>1</u>			DAS 36 9-89 16/10/13
140 *140* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				<u>1</u>			DAS 38 9-89 OCT 14 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval 		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

151464

Tuesday, September 27, 2016 11:54:02 AM

N900040100

Setup Start *NS1*

Stop *NS2*

1

Cust Item ID:

Start Date: 10/4/2016 **Start Qty:** 1.00

1

Customer:

Required Date: 10/12/2016 **Req'd Qty:** 1.00

Reference:

Run Start *NR1*

Approvals: _____ **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

[illegible]

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																																												
Date :	Step #:	QTY Effective :	MRB (QSI042) Approval																																																																											
Description Work Order Deviation		Disposition		Completed By																																																																										
				Lead hand / Supervisor Approval Verification																																																																										
				QC / QA Coordinator Approval																																																																										
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left;">Root Cause</th> <th colspan="4" style="text-align: left;">FAULT CATEGORY</th> </tr> </thead> <tbody> <tr> <td style="width:10%;">Environment ☐</td> <td style="width:10%;">No Re-verification ☐</td> <td style="width:10%;">Pressure/Forced ☐</td> <td style="width:10%;">Temperature/Cure ☐</td> <td style="width:10%;">Power Loss/Surge ☐</td> <td style="width:10%;">Positioned Wrong ☐</td> </tr> <tr> <td>Design ☐</td> <td>Operator ☐</td> <td>Bending ☐</td> <td>Set-up ☐</td> <td>Folio/Program ☐</td> <td>Outside Dimensions ☐</td> </tr> <tr> <td>Doc/Data ☐</td> <td>Offset/Setup ☐</td> <td>Centre Not Concentric ☐</td> <td>BOM/Route ☐</td> <td>Grain ☐</td> <td>Over/Under tolerance ☐</td> </tr> <tr> <td>Equip/Tooling ☐</td> <td>Supplier ☐</td> <td>Cracks ☐</td> <td>Broken/Damage/Defect ☐</td> <td>Weld ☐</td> <td>Part Incorrect ☐</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>Training ☐</td> <td>Crimp/Kink/Ripple/Wave ☐</td> <td>Inspection Incomplete/Unqualified ☐</td> <td>Wrong Stock Pulled ☐</td> <td>Part Lost/Missing ☐</td> </tr> <tr> <td>Material ☐</td> <td>Use for Testing ☐</td> <td>Cuffs ☐</td> <td>Contamination ☐</td> <td>Out of Sequence ☐</td> <td>Part Moved ☐</td> </tr> <tr> <td>Internal Transport ☐</td> <td>Poor Information ☐</td> <td>Crushing ☐</td> <td>Countersink ☐</td> <td>Off-set ☐</td> <td>Drawing ☐</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>Rushing ☐</td> <td>Heat Treat ☐</td> <td>Cut Too Short ☐</td> <td>Mislabeled ☐</td> <td>Finish ☐</td> </tr> <tr> <td>LOA ☐</td> <td>Product Improvement ☐</td> <td>Wave/Twist in Tube ☐</td> <td>Instructions Incomplete/Unclear ☐</td> <td>Fit/Function ☐</td> <td>Misread ☐</td> </tr> <tr> <td>Substation ☐</td> <td>Process Improvement ☐</td> <td>Marks/Chatter ☐</td> <td>Drill Holes ☐</td> <td>Misaligned/off center ☐</td> <td>Turning Sequence ☐</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>Manufacturing Process ☐</td> <td colspan="4" rowspan="2" style="text-align: center; vertical-align: top;">OTHER : ☐</td> </tr> <tr> <td>Misidentified ☐</td> <td>Past Due ☐</td> </tr> </tbody> </table>					Root Cause		FAULT CATEGORY				Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐				Misidentified ☐	Past Due ☐
Root Cause		FAULT CATEGORY																																																																												
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐																																																																									
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐																																																																									
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐																																																																									
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐																																																																									
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐																																																																									
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐																																																																									
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐																																																																									
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐																																																																									
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐																																																																									
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐																																																																									
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐																																																																												
Misidentified ☐	Past Due ☐																																																																													

Work Order ID 151464

Tuesday, September 27, 2016 11:54:02 AM

151464

Page 5

Item ID: D4004-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Side Restraint Angle
Start Date: 10/4/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 10/12/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	Identify as per dwg & Stock Location: <u>2242</u>	0.00							
200									
Packaging	Memo	0.00							
Packaging									
210	QC21- Final Inspection - Work Order Release	0.00							
210									
QC	Memo	0.02							
Quality Control									

DAS
6
9-89

OCT 3 1 2016

DAS
21
9-89

OCT 3 1 2016

DAS
21
9-89

OCT 3 1 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																																																																																																												
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval																																																																																																																																								
Description Work Order Deviation				Disposition				Completed By																																																																																																																																								
								Lead hand / Supervisor Approval Verification																																																																																																																																								
										QC / QA Coordinator Approval																																																																																																																																						
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: left;">Root Cause</th> <th colspan="6" style="text-align: left;">FAULT CATEGORY</th> </tr> </thead> <tbody> <tr> <td>Environment ☐</td> <td>☐</td> <td>No Re-verification</td> <td>☐</td> <td>Pressure/Forced</td> <td>☐</td> <td>Temperature/Cure</td> <td>☐</td> <td>Power Loss/Surge</td> <td>☐</td> <td>Positioned Wrong</td> </tr> <tr> <td>Design ☐</td> <td>☐</td> <td>Operator</td> <td>☐</td> <td>Bending</td> <td>☐</td> <td>Set-up</td> <td>☐</td> <td>Folio/Program</td> <td>☐</td> <td>Outside Dimensions</td> </tr> <tr> <td>Doc/Data ☐</td> <td>☐</td> <td>Offset/Setup</td> <td>☐</td> <td>Centre Not Concentric</td> <td>☐</td> <td>BOM/Route</td> <td>☐</td> <td>Grain</td> <td>☐</td> <td>Over/Under tolerance</td> </tr> <tr> <td>Equip/Tooling ☐</td> <td>☐</td> <td>Supplier</td> <td>☐</td> <td>Cracks</td> <td>☐</td> <td>Broken/Damage/Defect</td> <td>☐</td> <td>Weld</td> <td>☐</td> <td>Part Incorrect</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>☐</td> <td>Training</td> <td>☐</td> <td>Crimp/Kink/Ripple/Wave</td> <td>☐</td> <td>Inspection Incomplete/Unqualified</td> <td>☐</td> <td>Wrong Stock Pulled</td> <td>☐</td> <td>Part Lost/Missing</td> </tr> <tr> <td>Material ☐</td> <td>☐</td> <td>Use for Testing</td> <td>☐</td> <td>Cuffs</td> <td>☐</td> <td>Contamination</td> <td>☐</td> <td>Out of Sequence</td> <td>☐</td> <td>Part Moved</td> </tr> <tr> <td>Internal Transport ☐</td> <td>☐</td> <td>Poor Information</td> <td>☐</td> <td>Crushing</td> <td>☐</td> <td>Countersink</td> <td>☐</td> <td>Off-set</td> <td>☐</td> <td>Drawing</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>☐</td> <td>Rushing</td> <td>☐</td> <td>Heat Treat</td> <td>☐</td> <td>Cut Too Short</td> <td>☐</td> <td>Mislabeled</td> <td>☐</td> <td>Finish</td> </tr> <tr> <td>LOA ☐</td> <td>☐</td> <td>Product Improvement</td> <td>☐</td> <td>Wave/Twist in Tube</td> <td>☐</td> <td>Instructions Incomplete/Unclear</td> <td>☐</td> <td>Fit/Function</td> <td>☐</td> <td>Misread</td> </tr> <tr> <td>Substation ☐</td> <td>☐</td> <td>Process Improvement</td> <td>☐</td> <td>Marks/Chatter</td> <td>☐</td> <td>Drill Holes</td> <td>☐</td> <td>Misaligned/off center</td> <td>☐</td> <td>Turning Sequence</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>☐</td> <td>Manufacturing Process</td> <td>☐</td> <td colspan="7" rowspan="2" style="text-align: center; vertical-align: top;">OTHER :</td> </tr> <tr> <td>Misidentified ☐</td> <td>☐</td> <td>Past Due</td> <td>☐</td> </tr> </tbody> </table>										Root Cause				FAULT CATEGORY						Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	Past Expiry Date ☐	☐	Manufacturing Process	☐	OTHER :							Misidentified ☐	☐	Past Due	☐
Root Cause				FAULT CATEGORY																																																																																																																																												
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong																																																																																																																																						
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions																																																																																																																																						
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance																																																																																																																																						
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect																																																																																																																																						
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing																																																																																																																																						
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved																																																																																																																																						
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing																																																																																																																																						
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish																																																																																																																																						
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread																																																																																																																																						
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence																																																																																																																																						
Past Expiry Date ☐	☐	Manufacturing Process	☐	OTHER :																																																																																																																																												
Misidentified ☐	☐	Past Due	☐																																																																																																																																													

Picklist Print

Tuesday, September 27, 2016 11:54:02 AM

Page 1

Work Order ID: 151464

151464

Parent Item: D4004-041

D4004-041

Parent Item Name: Side Restraint Angle

Start Date: 10/4/2016

Required Date: 10/12/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev A 09.12.15 new issue Prelim EC verified by:DD IPP Rev:B
10.05.17 as per ECN10-562 DD verf: IPP Rev:C 12.03.07 as
per dwg rev.b DD verf: EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M2024T3S.063

Purchased

No

100

sf

192.2000

0.22

0.231579

M2024T3S 063

2024-T3 .063 sheet

**

PR 10/10/03

Location

Loc Qty

Loc Code

MAT

40.5

m135512

40.5

0.2

MAT009

151.7

m134640

62.1

m135032

3.2

m135612

86.4

D4004-3

Manufactured

No

180

Each

17.0000

1

1

D4004-3

Strut Lock Bracket

**

10/10/20
DAS
36
9-89

Location

Loc Qty

Loc Code

GA

17

106515

4

113720

3

126323

10

D4004-7

Manufactured

No

180

Each

44.0000

1

1

D4004-7

Hose Clip

**

10/10/26
DAS
36
9-89

Location

Loc Qty

Loc Code

GA

44

122491

44

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause			FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____						
Misidentified	☐	Past Due	☐							

Picklist Print

Tuesday, September 27, 2016 11:54:02 AM

Page 2

Work Order ID: 151464

151464

Parent Item: D4004-041

D4004-041

Parent Item Name: Side Restraint Angle

Start Date: 10/4/2016

Required Date: 10/12/2016

Start Qty: 1.00

Required Qty: 1.00

MS20426AD4-4

Purchased

No

180

Each

3,744.000

1

1

MS20426AD4-4

Rivet

16/10/26 DAS 36 9-89

Location

Loc Qty

Loc Code

GA

1779

125445

1779

ST312

1965

m132536

1965

MS20426AD4-5

Purchased

No

180

Each

1,466.000

2

2

MS20426AD4-5

RIVET

16/10/26 DAS 36 9-89

Location

Loc Qty

Loc Code

GA

1305

m133751

1305

ST312

161

m133751

161

M125445 2x

Tuesday, September 27, 2016 11:54:02 AM

Shop Packet Print

Page 2

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER :			

DART AEROSPACE LTD		Work Order: 151469
Description: Side Restraint		Part Number: D4004-1
Inspection Dwg: D4004 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.098	+0.004/-0.001	0.099	✓		Dc-02	
Ø0.129	+0.005/-0.001	0.130	✓		Dc-01	
3.65	+/-0.030	3.659	✓			
0.223	+/-0.010	2.228	✓			
10.63	+/-0.030	10.636	✓			
2.99	+/-0.030	3.00	✓			
5.79	+/-0.030	5.791	✓			
0.87	+/-0.030	0.871	✓			
2.40	+/-0.030	2.399	✓			
1.38	+/-0.030	1.383	✓			
0.50	+/-0.030	0.505	✓			
0.79	+/-0.030	0.791	✓			
0.38	+/-0.030	0.376	✓			
0.98	+/-0.030	0.986	✓			
1.18	+/-0.030	1.187	✓			
1.56	+/-0.030	1.572	✓			
0.063	+/-0.010	0.063	✓			

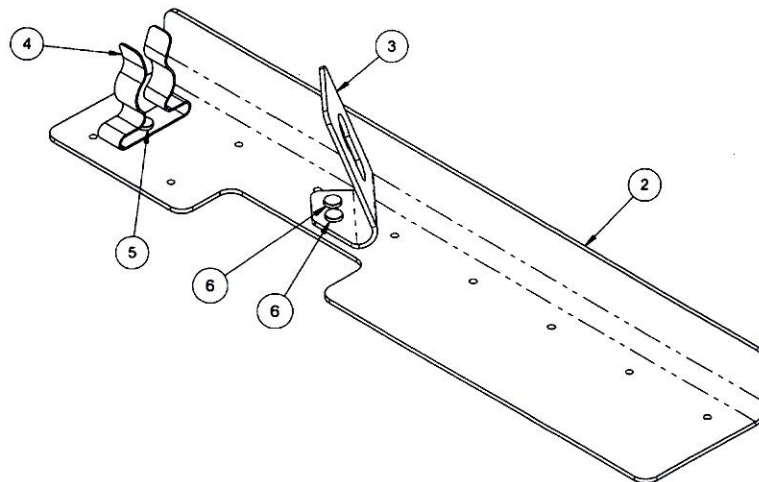
Measured by: PR
Date: 16/10/03

Audited by: ^{DAS} 38
Date: 15 OCT 2004

Preliminary Approval:
Date:

Rev	Date	Change	Revised by	Approved
A	10.08.03	New Issue P/O D4004-041	KJ	
B	13.02.27	Dwg Rev updated	KJ	

ITEM NO.	QTY. -041	PART NUMBER	DESCRIPTION	JOHN CAMERON AVIATION PART NUMBER
1	X	D4004-041	SIDE RESTRAINT ANGLE	JCA-M47-2-19
2	1	D4004-1	SIDE RESTRAINT	
3	1	D4004-3	ANGLE	
4	1	D4004-7	HOSE CLIP	
5	1	MS20426AD4-4	RIVET	
6	2	MS20426AD4-5	RIVET	



D4004-041 SIDE RESTRAINT ANGLE

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 151464 MLC
1609-28

RELEASED
2012-03-02
WJ

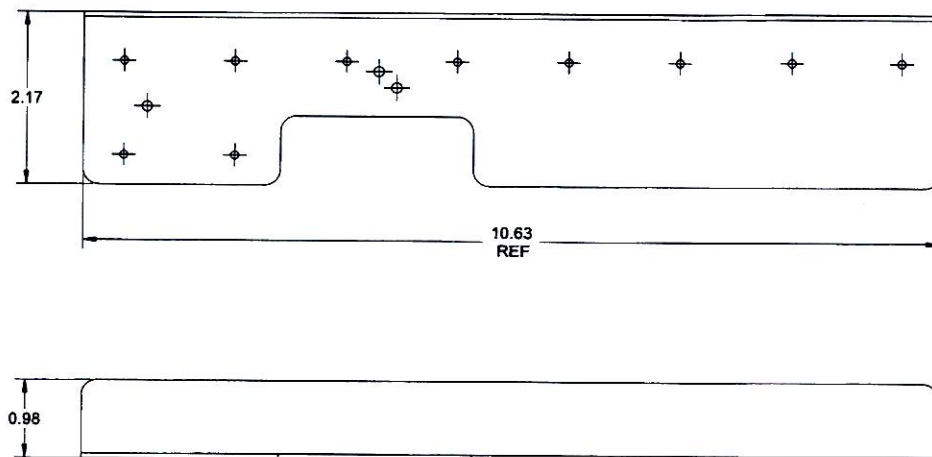
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT "ANSI 61 GREY" (4.3.5.15) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.21 lbs



B	CHANGE POWDER COAT FROM "GREY SANDEXT" TO "ANSI 61 GREY", ZN A8-1, ZN A8-2.	DC	12.02.27
A	NEW ISSUE	HS	10.02.10
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	12.02.27		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D4004 REV. B SHEET 1 OF 11 TITLE SIDE RESTRAINT SCALE NTS COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD			

DART AEROSPACE PART NUMBER	JOHN CAMERON AVIATION PART NUMBER
D4004-1	REF JCA-M47-2-19



D4004-1 SIDE RESTRAINT

NOTES:

- 1) MATERIAL: MADE FROM D4004-1F
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.18 lbs

DESIGN	<i>JS</i>	DART AEROSPACE LTD	
DRAWN	<i>JS</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>JS</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>JS</i>	D4004	SHEET 3 OF 11
APPROVED	<i>JS</i>	TITLE	SCALE
DE APPR.	<i>JS</i>	SIDE RESTRAINT	NTS
DATE	12.02.27	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

RELEASED
2012-03-02
MP

